

In re Patent Application of
CHAI
Serial No. 10/754,238
Filed: JANUARY 9, 2004

REMARKS

Applicant thanks the Examiner for the careful and thorough examination of the present application, and for the indication of allowable subject matter. Applicant affirms the election of Group I, Claims 1-28. Claims 1-28 remain pending in the application. Claims 29-39 have been canceled without prejudice to Applicant's right to file a divisional application. Favorable reconsideration of the rejections is respectfully requested.

I. The Invention

As discussed in connection with FIGS. 3-7, for example, the invention is directed to enhancing the performance of LSO crystals. This is provided by a method including diffusing oxygen into a body of monocrystalline LSO by heating the body for a period of time in an ambient containing oxygen (e.g. Claim 1). The diffusing may be carried out so that the body of monocrystalline LSO is fully oxygenated. The body of monocrystalline LSO may have oxygen vacancies therein, and the method may include supplying oxygen to fill at least some of the oxygen vacancies in the body of monocrystalline LSO (Claim 19).

II. The Claims are Patentable

Claims 1-28 were rejected as allegedly being indefinite for the reasons set forth on page 3 and 4 of the Office Action. More specifically, the Examiner asserts that

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Claims 1 and 19 omit essential steps related to providing a non-enhanced LSO body. Applicant traverses the Examiner's assertion. Nothing in the specification discusses any other essential steps related to providing the LSO body. Furthermore, the claims are directed to a method of treating or enhancing the performance of an LSO body. Thus, no preliminary steps of providing the LSO body are necessary because the claimed method clearly applies to the treatment of an existing body of LSO.

Also, the Examiner refers to Claims 2-4 and 16-18 and asserts that it is unclear whether additional steps are "implied" by the stated properties. Applicant points out that each of these dependent claims further defines the "diffusing" step recited in independent Claim 1, for example, regarding the amount of oxygenation or type of increased performance. The claims are clear and no other steps are "implied" or meant to be implied.

Furthermore, Applicant points out that the Examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. §112, second paragraph should be whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the Examiner might desire. Examiners should not reject claims or insist on

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their own preferences if other modes of expression selected by Applicant satisfies the statutory requirement.

As the Examiner is aware, the essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. If the scope of the invention sought to be patented can be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. §112, second paragraph is not appropriate.

Accordingly, Applicant believes that Claims 1-28 meet the statutory requirements of 35 U.S.C. §112, second paragraph.

Claims 1-7, 11-14 and 16-18 were rejected in view of Manente et al. (U.S. Patent No. 5,660,627) for the reasons set forth on pages 4-6 of the Office Action. The subject matter of Claims 8-10, 15 and 19-28 was indicated as being allowable. Applicant contends that Claims 1-7, 11-14 and 16-18 clearly define over the cited reference, and in view of the following remarks, favorable reconsideration of the rejection under 35 U.S.C. §102 and §103 is requested.

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Independent Claim 1 includes diffusing oxygen into a body of monocrystalline LSO by heating the body for a period of time in an ambient containing oxygen. It is this combination of features which are not fairly taught or suggested in the cited reference and which patentably define over the cited reference.

The Examiner has relied on the Manente et al. patent as allegedly disclosing the invention as set forth in Claim 1. The Manente et al. patent is directed to a method for producing lutetium oxyorthosilicate crystals, which includes maintaining the interface between a crystal and the melt from which it is pulled substantially flat as the crystal is grown. In a Czochralski growth method, the rate of rotation of the crystal and its diameter are typically controllable to provide the flat interface as the crystal is pulled. Specifically, the Examiner asserts that the method of Manente et al. includes "diffusing oxygen into the body of monocrystalline LSO by heating the body for a period of time in an ambient containing oxygen." In making this assertion, the Examiner relies upon the teaching at column 2, lines 46-48 of Manente et al. that the "crystal boule is grown in a nitrogen atmosphere which can include a small amount of oxygen." Such a conventional approach is also discussed at paragraph [00014] in the Background section of the present specification.

Applicant maintains that the Examiner has misinterpreted the cited reference. The reason to limit the growth in nitrogen or argon or another inert gas environment is

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to prevent the oxidation of the Iridium crucible. If there is no oxygen at all, Iridium will break out from the crucible wall and float on the surface of the melt which is not desirable during crystal growth. So it is conventional to add about 1% oxygen in the gas mixture. This small amount of oxygen will help to burn out the Iridium particle to make the melt surface clean. However, as is would be appreciated by those skilled in the art, this amount of oxygen is not enough to oxygenate the crystal. Indeed, there is no disclosure or teaching in the cited reference of diffusing oxygen into the body of monocrystalline LSO at all.

As the Examiner is aware, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim.

There is simply no teaching or suggestion in the cited reference to provide the combination of features as claimed. Accordingly, for at least the reasons given above, Applicant maintains that the cited reference does not disclose or fairly suggest the invention as set forth in Claim 1. Furthermore, no proper modification of the teachings of this reference could result in the invention as claimed. Thus, the prior art rejections should be withdrawn.

It is submitted that the independent claims are patentable over the prior art. In view of the patentability of

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the independent claims, it is submitted that their dependent claims, which recite yet further distinguishing features are also patentable over the cited references for at least the reasons set forth above. Accordingly, these dependent claims require no further discussion herein.

III. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance. An early notice thereof is earnestly solicited. If, after reviewing this Response, there are any remaining informalities which need to be resolved before the application can be passed to issue, the Examiner is invited and respectfully requested to contact the undersigned by telephone in order to resolve such informalities.

Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 this 26 day of June, 2006.

